

Messages for Lee Teng

February 24, 2005

Lee Teng – The Early Years

Albert Crewe

February 6, 2005

Lee Teng and I have been colleagues and friends for more than half a century. It is a story that is largely forgotten because it is so long ago, at the very beginnings of high energy physics. My first memory of Lee dates to 1951 or 52 when he was working on the synchrocyclotron project at the University of Chicago, and I was working on the one at the University of Liverpool. High energy machines! 450 Mev and 380 Mev respectively.

What we had in common was the attempt to obtain an external beam. Acceleration to those energies was not too much of a problem – McMillan had already established the principal of phase stability, but as the circulating beam approached the edge of the magnetic field, a series of resonances occurred and the beam was lost to the pole pieces.

In Liverpool we were a couple of years behind Chicago, but we had access to their internal reports to the ONR – presumably legally – or at least our Department Head had such access.

I vividly recall the day that he called me to his office and handed me one of those reports and said “read this and then get an external beam”. “This” was a report by Jim Tuck and Lee Teng on an ingenious way to do it.

The idea was to excite controlled horizontal oscillations while keeping vertical oscillations small. This was to be done by introducing a bump in the magnetic field at one azimuth and a hollow at another. Of course this raised many technical problems such as the experimental difficulties of building such a system without disturbing the acceleration process, and on the theoretical side there was the problem of fixing the many parameters.

It is worthwhile to mention the “state of the art” at that time. There were no gaussmeters, because we were still in the age of the ballistic galvanometer. Things improved a little with the introduction of the Dicke amplifier (one of the first operational amplifiers), but the measurement of magnetic fields was still difficult. On the theoretical side, there was the slide rule and there were tables of functions. There were no computers. The nearest thing to a computer was the Marchant calculator. It could add, subtract, multiply and divide, but that was about all. It’s chief property was that it was possible to give it a problem such that the effort to produce an answer would involve such motions of the many cog wheels that it would play a tune. It is not surprising that the calculation of particle trajectories was prone to errors that could accumulate and give the wrong answer.

In any case, their attempt to get an external beam failed, although Lee and Jim must have been under heavy pressure to abandon the attempt and turn the machine over to the users.

In the case of the Liverpool machine, I had two great advantages. First I had the reports of the work of Tuck and Teng which gave recipes for building the field ramps and the channel for the extracted beam; and secondly I had an unsung genius – Le Coutoeur – as a colleague. He solved the theoretical problems by inventing the matrix method of handling particle trajectories. I say “invented” although I do not know whether he was the first to do so, only that he never read any journals and would not know if anyone had preceded him. Neither would he care. He did what came naturally to him.

In any case, the Tuck and Teng system worked in Liverpool, and the reason I am here today is that I was invited to Chicago to do the same thing. All thanks to Lee.

I first met Lee, person to person, in 1957. He, together with Martyn Foss and Jack Livingood had designed a unique 12 GeV accelerator in response to the demand for a Midwestern machine that could be built quickly. This was the much-maligned ZGS. I say “much maligned” because of a recent book which calls it “the machine that should not have been built”. Nothing could be further from the truth, although this is a different story. In any case, I was just one of a group from the University of Chicago that was established to make sure that the needs of the user community were met. I believe that this was the first accelerator to be specially designed from the beginning to meet these needs.

We all worked happily together and eventually the project was funded. For some unknown reason I was put in charge of the construction, and Lee and I worked together for 3 years or so. At the end of that time – 1961 – I had to move on, and one of my main responsibilities was to appoint a successor. I had no hesitation in choosing Lee. As a result, he had the pleasure of switching on an accelerator that he had designed, and then tuning it up for operation. He remained in charge for several years.

I left Argonne in 1967 and since then have lost track of Lee’s work, but fortunately have not lost track of him as a friend.

One anecdote as a postscript. I went to Japan, for reasons I cannot now recall, but the trip was memorable in another way.

When Lee heard that I was going to Japan, he suggested that I stop in Taipei and meet his father, who at that time was Minister of Education for Taiwan. It was a pleasure to meet him and he invited my wife and I to visit his home. He lived in a Japanese-style house with a Japanese garden. I believe it was a product of the Japanese invasion. In any case, the most prominent feature of the garden was a copy of the famous fountain in Brussels of a young boy endlessly urinating into a basin. Looking at the sculpture I knew that there was something wrong, but it was some time before I knew what it was. The copy was exact except for one thing, the sculptor apparently could not reproduce Caucasian eyes and the boy had a definite Asian face. I can only hope that the sculpture remains somewhere in the possession of Lee’s family.

STANFORD LINEAR ACCELERATOR CENTER
Operated for the U.S. Department of Energy by Stanford University



February 2, 2005

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**Dr. Lee Teng,
Argonne National Laboratory**

Dear Lee,

Greetings on this very special and well-earned occasion. I am sorry not to be able to be with you, but I am sure that you will be surrounded by friends and loved ones.

I recall fondly many fruitful interactions with you and time spent at meetings for Heavy Ion Fusion. My own news is that I will also be retiring this spring. It is time to make room in the budget for some younger scientists.

Very Best Wishes for a Happy and Healthy Retirement,

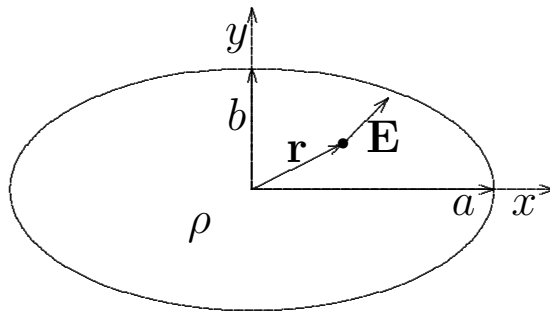
Bill Herrmannsfeldt

Dr. Lee C. Teng

Dear Lee,

For your retirement I wish you all the best. I am sure you will continue your activities and interests. I consider it a privilege to know you, to have met you on different occasions and to have profited from your knowledge and experience. Your contributions to our field are numerous: resonant extraction, transition jump, lattices with infinite transition energy and low emittance optics for synchrotron radiation rings are only some of them. The treatment of coupled motion in rings by you and D. Edwards is a master piece in elegant mathematics.

My favorite work of yours is the calculation of the space charge fields and force in an uniform elliptical beam. It is a complicated problem, treated with elegance, leading to a simple and useful result which you published as a modest internal note: L. Teng, ANL-Report, ANLAD-59, (1960)



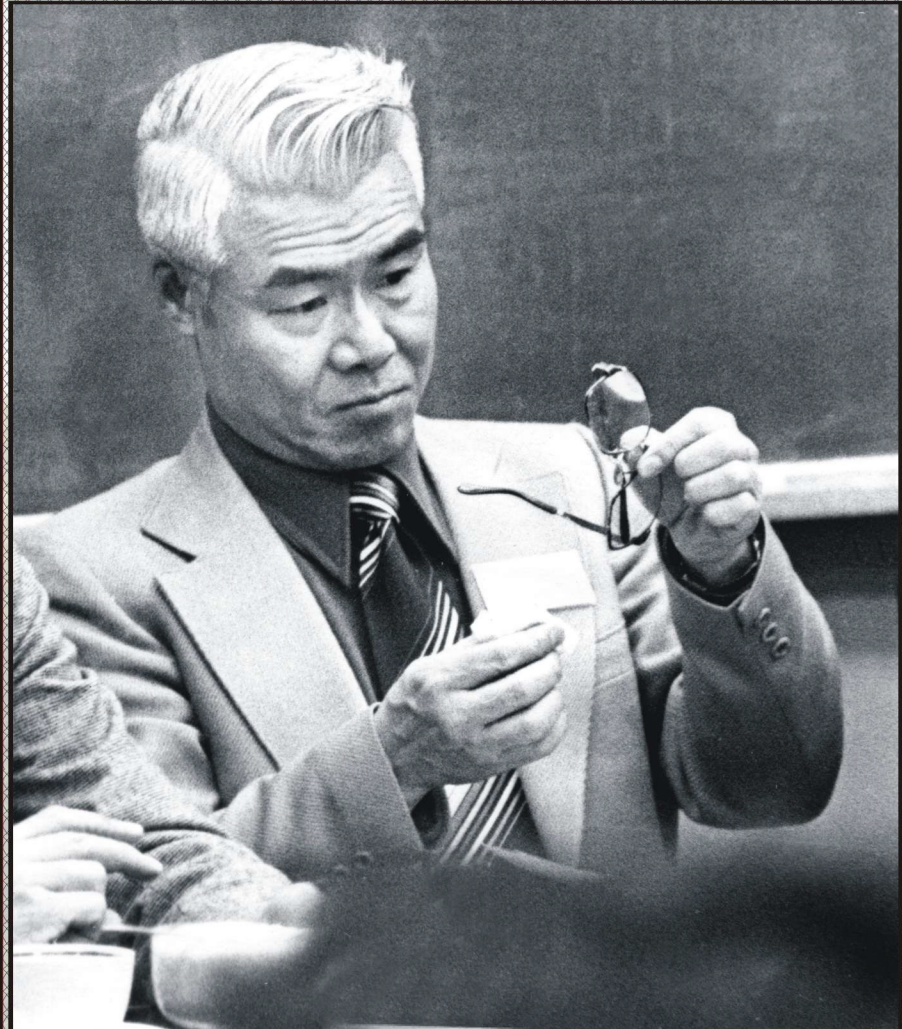
$$\mathbf{E} = \frac{I}{\pi\epsilon_0(a+b)\beta c} \left(\frac{x}{a}, \frac{y}{b} \right), \quad \mathbf{B} = \frac{\mu_0 I}{\pi(a+b)} \left(-\frac{y}{b}, \frac{x}{a} \right)$$

$$\mathbf{F} = e (\mathbf{E} + [\mathbf{v} \times \mathbf{B}]) = \frac{eI}{\pi\epsilon_0\beta c\gamma^2(a+b)} \left(\frac{x}{a}, \frac{y}{b} \right).$$

Was it a genius who wrote these lines?

With much admiration and best wishes,

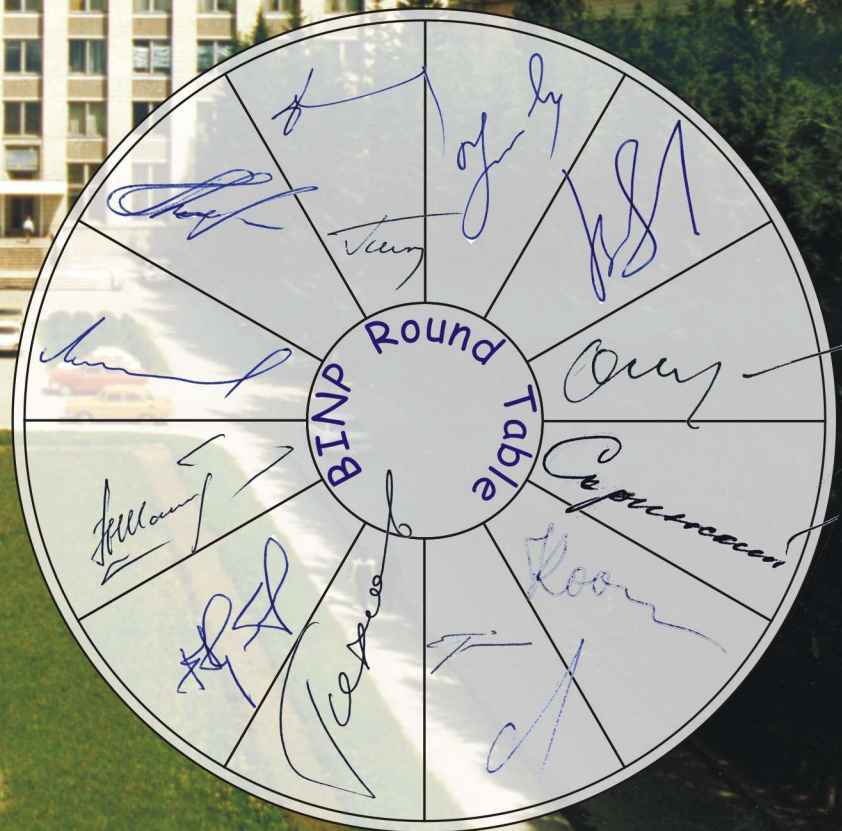
Albert Hofmann, CERN



Professor Lee Teng at Round Table,
BINP, Novosibirsk, 1978



Our warmest wishes on the
remarkable event!



Zhirong Huang on behalf of Alex Chao

We are familiar with Lee's many pioneering contributions in accelerator physics. His deep insight and his elegant style have been what we admire and wish to assimilate. He has mentored generations of accelerator physicists in the US, Mainland China and Taiwan. We are fortunate to have him around.

Now I want to speak of his retirement.

Over the years, Lee never acknowledged his advancing age. He never realized that he was supposed to add one to his age every year. Three years ago, while he thought he was 43, he climbed and went straight up the tall mountains of Zhang Jia Jie, China. And, no, he did not have to recatch his breadth like all the rest of us.



“ Who? Me? Retiring? ”

And now after finally learning how to count his age correctly last year, he announced his retirement.



Lee practicing his retirement...

We feel happy for him and his newly acquired freedom, but yet, we can not help wondering what thoughts he might be engaging himself in tomorrow. Is he going to continue his deep thinking of physics? Or will he contemplate of some new ventures?

Note that it is not Nancy who is sitting next to him.



Only Lee knows what is on his mind....

But for whatever he plans of doing, we wish him happiness and the very best of luck!

Congratulations, Lee and Nancy!





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December 29, 2004

Dr. Lee C. Teng
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U. S. A.

Dear Dr. Teng:

Congratulations on your retirement!

Your long devotion and support to technology development in Taiwan is highly appreciated. The achievements of the National Synchrotron Radiation Research Center clearly mark your fine contributions.

I would like to take this opportunity to present to you a small gift, a ceramic painting, to show our sincere appreciation and gratitude.

Sincerely yours,

A handwritten signature in black ink that reads 'Yuan T. Lee' in a cursive, flowing script.

Yuan T. Lee
President
Academia Sinica

Dear Lee,

Friends told me that your retirement symposium is today. I want to thank you for many discussions and the advice you gave me. I really appreciated it. All the best for the coming years.

Greetings Robert

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Dear Lee,

I'm writing on behalf of your friends and admirers at TRIUMF to wish you a long and happy "retirement" (in quotes because none of us can quite believe that you'll drop out of accelerator physics entirely!), and to express our regrets at being unable to get to your party.

For over 50 years now you've played a leading role on the U.S. accelerator scene - a career of extraordinary length, matched only by its extraordinary breadth. You seem to have been involved with every sort of machine: cyclotrons, linacs, FFAGs, and synchrotrons (of all sorts and sizes), many of which, at their different times, have kept the U.S. at the forefront of accelerator construction. And in all these areas you've made important contributions to accelerator physics.

In fact, I hadn't been long in the accelerator business - it was over 40 years ago and I was a grad student at the Rutherford Lab - before I realized that the key to understanding a subject was to read what you had to say about it. The subject I'd been struggling with then was depolarization in cyclotrons. Other people's treatments had left me quite befuddled - but then I found your paper - and all became clear! Subsequent experience showed this not to be an isolated example - clarity seems to be a defining feature of your work.

Closer involvement came in the early 80s, when you acted as a consultant for the TRIUMF KAON (Kaon-Antiproton-Otherhadron-Neutrino) Factory, influencing its basic design in several significant ways. With 100 microamp beams in mind, four topics on which you had already made fundamental contributions were major concerns for us: space-charge detuning, transition avoidance, transversely coupled instabilities, and resonant extraction (from the 30 GeV ring). In fact you also persuaded us that we had to do the unthinkable and install a resonant extraction system in our H- cyclotron, in order to save the stripping process for the more challenging problem of injection into the synchrotron. Your guidance undoubtedly contributed to the later verdict by the Feshbach Subcommittee of NSAC that the TRIUMF design was technically preferable to those proposed by our two US rivals.

This consultancy also revealed another great Teng characteristic - your enormous productivity. From four short visits came four lengthy technical reports with fully worked out designs for various systems. Certainly consistent with your career total of nearly 400 publications - but that in itself is an amazing statistic given your senior management responsibilities for most of that time!

Following the political death of KAON, our paths have intersected less often - mostly chance meetings at conferences and on committees - though there was one encounter that I shall always remember with pleasure for its total unexpectedness - on a side street in a small town in southern Bohemia, where we must have been the only physicists within a hundred miles!

Within accelerator physics, though, it's even harder to avoid meeting you. Recently, I've become involved in another approach to neutrino factories - accelerating muons to 20 GeV. For this, non-scaling FFAGs seem to offer the most economical solution, though the changing orbit period leads to some inefficiency. Last year, however, with the help of powerful computers, Grahame Rees found he was able to do what was generally thought impossible and design an isochronous high-energy FFAG - a muon cyclotron - overcoming this defect. But congratulations on this breakthrough were soon found to be premature, when it was discovered that Lee Teng had got there first - a mere 50 years ago, in a 1955 ANL report and 1956 APS talk, "Constant frequency multi-BeV FFAG accelerators"!

And I'm sure this isn't the last we'll hear of you!

With many thanks for your help and advice over the years, and all good wishes to you and Nancy for the future,

Mike Craddock

P.S. A printed copy of this is in the mail, together with a card from others here.

Dear Lee,

I am unable to attend your retirement celebrations on February 24, 2005. I want to wish you good luck and many wonderful years to come, both in physics and your personal life

It has been a true pleasure to get to know you. Especially, I will recall the teaching classes in accelerator physics at the APS, your broad knowledge, and your openness and willingness to help anytime.

Hope to see you around sometimes.

With best regards,
Roger Dejus

Dear Prof. Teng,

On the great occasion of your retirement symposium, we would like to send our warmest congratulations and best wishes to you. We heartily congratulate that you have made tremendous and significant contributions to both particle and accelerator physics after having devoted all your energy and your professional life to the field of physics for 57 years. We sincerely wish that you might look back with pride and satisfaction and do enjoy all the happiness that the new and relaxed life can bring you.

As we all know, you are recognized as a great forerunner and prestigious expert in the synchrotron radiation community of the world. You have always taken a leading and important role in design and construction of a series of famous synchrotron radiation facilities over half a century. Meanwhile, you have dedicated to the communication and collaboration with several universities and laboratories in China. We are lucky enough to be one of them.

Therefore, we'd take this opportunity to express our highly esteem and gratitude. Thanks for your great help and support to Shanghai Institute of Applied Physics and Shanghai Synchrotron Radiation Facility in the past years. We firmly believe that we could continuously get kind support and professional suggestions from you in the construction of SSRF.

May you enjoy a happy retired life! Welcome to Shanghai!

Sincerely yours,

Xu Hongjie

Director

Shanghai Institute of Applied Physics

Chinese Academy of sciences

Shanghai Synchrotron Radiation Facility

Zhao Zhentang

Deputy Director

Shanghai Institute of Applied Physics

Chinese Academy of sciences

Shanghai Synchrotron Radiation Facility

Dear Prof. Teng,

Your retirement symposium is approaching, and it is a great occasion indeed that we can share your great career experience and express our sincere wishes. As you may know, I am the first generation university students majoring in charged particle accelerators in China after “culture revolution”, I entered this field simply because China needed to train young scientists and engineers for the 50 GeV Beijing proton synchrotron in late 1970's. At that time, I heard some stories about your efforts to help China to design and construct the accelerator, particularly a story about how you push Chinese scientist to do the real engineering work, it was very encouraging to me to stay in this field indeed.

I am very happy and lucky that I have the chance to meet you regularly since BEPC upgrades started in 1991, from collider to synchrotron radiation light source and from China to US, I have been being encouraged and impressed by your knowledge and your insight in accelerator field, I enjoyed the happy time we got together either for the professional discussions and lectures or for the free talks on world and life. I admire your great experience in accelerator science and technology, and I appreciated very much your guidance in this exciting field.

I would like to express my heartfelt thanks for your persistent support to my work and the SSRF project during past 10 years, particularly your valuable helps in the SSRF project critical period. Now SSRF is under construction, there is no doubt it needs more of your continuing support. I sincerely wish that you enjoy your retired time, and hope you can have more chances to visit China and SSRF. I am looking forward to seeing again this year.

It is a pity that I could not attend your retirement symposium, I would like to extend all my best wishes and blessings to you for a successful symposium and an enjoyable retirement life.

With my best regards,

Zhentang Zhao

Dear Lee,

Warmest congratulations and best wishes for your retirement!

And, of course, thank you for your many precious contributions to the physics of particle accelerators.

John Jowett
CERN

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Dear Lee:

Best wishes on your retirement! Is it real? My retirement just means that I go to BNL once a week rather than daily - I suspect yours will be similar. Sorry I can't come in person - I am skiing in Utah.

All the best,

Ernest Courant

E & S Courant

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Dear Lee,

I just looked into the Beam Dynamics News Letters and learned about your Retirement Symposium.

With great pleasure I remember talking to you and learning from you many years ago. I have been always very impressed by your personality and your competence.

Wish you all the best for the future, especially health.

Yours
Norbert Angert

Dear Lee,

Regretfully I am unable to attend your retirement celebration as I am out of the country. Nevertheless, I would like to take this opportunity to offer you my congratulations both on your retirement and on the many accomplishments and contributions to accelerator physics of your wonderful career. While the Main Ring no longer exists, your legacy lives on at Fermilab in the form of the Booster, Tevatron, and the slow extraction system that now resides in the Main Injector. And in Southern California patients continue to receive life saving proton therapy in the machine that you were so instrumental in bringing into being. You have a lot to be proud of!

Best wishes for a long and happy retirement,

Steve Holmes

Dear Lee,

An obligation at Ames Research Center prevents me from joining in the celebration of your distinguished career.

Your work has rescued me at two points in my own career. The first was your scheme for extracting the beam from a synchrocyclotron. I was supposed to get the beam out of the Chicago cyclotron and I knew that you had the key. I didn't actually implement that scheme myself - it didn't look easy - but I found a fellow over in Liverpool (Al Crewe) who had done it successfully and was willing to do it again.

The second was your design for the ZGS. I was supposed to be responsible for seeing that the machine got built and I had at least the good sense to let you and some other good people do it your way. You saved me. Thank you.

Best wishes,

Roger Hildebrand

Hello Lee,

It is with great pleasure that I send you my best wishes for the coming holidays, for the New Year 2005 and for your final retirement - I think you have already retired several times, but you were still doing useful and interesting work as well as a lot of teaching.

It has been a constant source of inspiration and knowledge to discuss with you since we met the first time over 30 years ago when you visited CERN, and I have been very lucky to get your invaluable advice while I was serving almost 10 years on the APS machine committee.

All the best for you and I hope we will meet again in the not too far future.

Bruno Zotter

Dear Lee,

As I will be unable to attend the ceremony on 24 February I would like to take this opportunity to wish you a long and happy retirement. Our paths may have first crossed in the early 70's but genuine professional links probably commenced later during the design/construction of the APS. I do know how much that highly successful project owes to your personal initiatives and I also value various pieces of advice that you have passed on to me over the years. I want to add that you are truly a gentleman of the 'old school', unfailingly friendly and helpful, and that our accelerator community will miss you greatly.

With very best wishes and thanks, from all of your UK colleagues,

Mike Poole

Dear Lee,

I understand that you have recently retired from ANL. Unfortunately, I will not be able to make your retirement celebration. However, let me say that I know you have made many important contributions to accelerator science during your career, and I wish you all the best in your retirement.

Sincerely,

Gerry Dugan

Dear Professor Teng,

On the occasion of your retirement, my colleagues join me in sending you our best wishes and extending our high salutations.

Fifty-three years is a short span in human history, but your tireless unremitting efforts and whole-hearted devotion to career in this period of time are immeasurable. And what's more, your significant contributions to accelerator physics can hardly be enumerated and challenged. It is natural that your retirement has become the center of attention from the international community of accelerators. The loss caused by your retirement will soon be felt. However, a new generation of promising young accelerator physicists you have cultivated have come up, who will model themselves upon you by developing new accelerator physics theories and technologies. In addition, particular mention should be made of the great contributions you have made to the development of China's accelerators, which will be written in history. Since you are still very energetic, we sincerely hope that you can keep on helping us in case of need.

May you enjoy your life by keeping your wife company, doing some sightseeings or anything you want to do. I am sure that the wonderful world will render you unlimited pleasure once you plunge yourself in it.

With my personal regards to you,

Shouxian Fang

Dear Lee,

I have enjoyed my occasional interactions with you, and I have learned a lot from your work, particularly the calculation of the electric field of a uniform elliptical distribution.

I am sorry I will not attend your retirement celebration in person. I wish you all the best in your new phase of life, although I imagine you'll be around regularly at the Lab. If so, I look forward to seeing you again when I visit Argonne.

Best wishes,

Miguel Furman

Dear Lee;

January 25, 2005

Sorry I cannot be there to join you and your many friends to celebrate an extraordinary scientific career of which you can be very proud. It is hard to identify anyone who has contributed as much as you have to so many areas of accelerator-based science and applications in the US and abroad.

I wish you all the best in the years to come and hope that I and others can continue to call upon you for advice and help in dealing with complex issues and technical challenges that can benefit from your wisdom and experience.

Sincerely,

Herman Winick

Dear Lee,

Sorry not to be with you on Feb. 24. You should be very proud of the contributions you have made over a very long period. But the torch is now being passed to a younger-more computer oriented- generation. Let us enjoy their successes!

Best wishes in your retirement.

Bob Gluckstern

Robert Gluckstern

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Dear Professor Lee Teng,

We are very happy to know that you will retire, and a ceremonious commemoration will be held to honor your achievements for your long time career. Your scientific accomplishments and contributions to the field of accelerator physics during the period longer than half a century are very predominated and highly effective to the development of the world accelerator sciences. We appreciate your continuous helps to us very much during the long period since the beginning of the BEPC construction or even early. We also very much appreciate your instruction to our colleagues in accelerator physics in many situations. We are very sorry that we can not attend your commemoration, but we do hope the commemoration will be very fervent and remarkable. Congratulate to you again, and wish you are in a very good health in the future!

Sincerely yours,

Guo Zhiyuan and Qin Qing
Institute of High Energy Physics
Chinese Academy of Sciences
Beijing, China

Dear Dr. Teng:

Let me begin by wishing you all the best and happiness for your retirement after 57 years of distinguished service to the scientific community.

I am not an accelerator physicist, but I have noticed your work for a very long time. In fact, I read in a magazine article about your work when I was about ten years old, and that was 45 years ago. I did not understand the physics issues addressed in that article at that time, but my impression was that it was really very important, and the article aroused my curiosity enormously.

Well, I have become a physicist, and have built a career based on synchrotron radiation research. This field would not have been possible without the work of accelerator physicists like you. Thank you!

Unfortunately, as much as I would like to, I won't be able to attend the celebration. I have to be in Germantown on that day for our annual laboratory administration review.

Have fun and take care,

Tai

Tai C. Chiang
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<chiang@mrl.uiuc.edu>

Dear Lee,

I would love to be able to join you and your many friends at your retirement celebration, but will be out of town during that week. I hope that this doesn't mean that we'll see each other less frequently. I regret having to miss celebrating with you and your many friends, and wish you well in your new phase of life.

Best regards,

Jack Carpenter

Dear Lee,

I am ever so sad that my circumstances do not permit me to be with you on your day of celebration. I am living in Prior Lake, MN, and am not able to travel very much.

I recall very well our mutual years together on the ZGS and APS projects. Back in the late 50's I was a newcomer to the accelerator field and learned much about the subject from you. You were the one who was breaking new ground in accelerator theory and it was you who led us to the successful commissioning of the ZGS Accelerator.

I will be with you in spirit on Feb 24th and wish you much happiness in your new life as a retiree.

During my move last Oct I found the attached photo in one of my shoe boxes of pictures I don't remember the three W's, Where, When, or What. And I only know 2/3 of the Who. I see that my hair still had some color and your eyebrows were still dark. Maybe you can enlighten me.

Best of luck.

Your friend and longtime colleague,

Ed Crosbie

Being far apart on both sides of the ocean, I myself am not able to join Dr. Lee C. Teng's Retirement Celebration. Please accept and convey my warmest congratulation for his achievements in accelerator physics over the half century.

Dr. Lee C. Teng is our old friend and senior advisor. During the later part of Dr. Lee C. Teng's 53 years service to accelerator community, the accelerators got a rapid development in China. Dr. Lee C. Teng visited Beijing as early as in 1975, when we were designing our 50 GeV Beijing Proton Synchrotron, BPS. He bridged IHEP and FNAL for collaboration in the BPS design, when many Chinese scholars visited US to learn the advanced knowledge on modern accelerators. He has also contributed to the design and construction of China's first high energy physics machine, the Beijing Electron-Positron Collider; the first dedicated synchrotron radiation facility in China, the Hefei Light Source. In the recent years, he has frequently visited China to teach young students in accelerator schools on accelerator physics, giving lectures on colliders, light sources, FELs, new acceleration theory and others.

All of us in IHEP miss him particularly at this time when the BEPCII and SSRF are in progress. We appreciate his contribution to the development of accelerators in IHEP, as well as in China. So I hasten to write this letter to offer my heartiest congratulation and best wishes for his retirement.

C. Zhang
Deputy Director of IHEP

Dear Lee,

I am sorry I cannot be present in person at the celebration of your remarkable career. I feel privileged to have known you and to have interacted with you in workshops and reviews over the past 25 years. I have always admired you as a scientist and for your deep understanding of accelerator physics I am impressed by your prominent involvement in pioneering accelerator research and by the mark you have left in some of the most important projects of the past 50 years. One of the human qualities that I have appreciated most in you is your kindness. I have always regarded you as a real gentleman. I was honoured by both you and your wife's presence in the Arcidosso Workshop. It was fun to show you around my village and your appreciation of the town and of the Workshop was for me a source of pride. So, from a fellow retiree, I wish you all the best in retirement. I know that you will continue to occupy your mind in scientific matters and I hope we will meet again soon.

Max Cornacchia

Dear Lee,

It's a long way from the Middle East to the Middle West.
And even though Gil Perlow calls Rehovot the "Downers
Grove of the Middle East" we can't make it to your
retirement party.

So - Best wishes for joining the club of active retirees - and
as they say in Israel "until 120".

Harry Lipkin

Dear Lee,

I am in Australia and so, unfortunately, will be unable to attend the symposium in your honor next week.

Argonne has greatly benefited from your efforts over the years. I have always felt proud to know you as a friend and colleague.

Best wishes,

Don Gemmell

Hi Lee:

Sorry I can't attend the festivities next week, but I'll be on vacation. I just wanted to send you and Nancy my best wishes. I remember way back in 1967, when I joined the Particle Accelerator Division (PAD), you were the Division Director. It seems to me that almost no time went by before you had gone off to Oak Brook to the National Accelerator Laboratory team. Our paths didn't cross again until you came back to Argonne on the 6-GeV team, probably around 1988. I've enjoyed our association and I'm sure it won't be over, since we'll probably still be seeing each other as STA's.

Hope your evening is wonderful.

Warmest regards

Joanne Day

Dear Lee,

On the occasion of your retirement, allow me to add my congratulations on your great career. I enjoyed very much working for you during your stint here at Fermilab -- the day-to-day interactions as well as your advice and the more formal lectures you gave us during that time.

It's been a busy fifty seven years for you so let me wish you a long, pleasant and relaxing retirement. Enjoy!

--Andy

Andreas Van Ginneken
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vangin@fnal.gov

Dear Lee,

I am sorry I will not be able to attend your retirement celebration. I am glad to have this opportunity to thank you for all the help you have given me over the years.

I really liked your autobiography.

Thanks and Best of Luck!

Rol Johnson

Dear Lee,

Welcome to the world of retirement. We are enjoying a month in sunny Florida, but I am sorry to miss your retirement celebration.

I have enjoyed working with you from time to time over the years, and have long admired your fine contributions to many state-of-the-art accelerator projects.

All good wishes for the future.

Tom Fields

Dear Lee,

Congratulations on your retirement! I don't believe for a moment that you will quit working. However it is time for you to pick and choose exactly what you work on, rather than to work only on group activities. I am sure that you have a lot more lead in your pencil, and a lot more to give to the world.

Nevertheless, it's time to reminisce. I believe we first met in 1957, and crossed paths very often thereafter, at MURA, ANL, and FNAL, and even at BNL. The ZGS, NAL, the Tevatron, and Loma Linda are behind us now. I suspect that we have more to do on proton radiotherapy.

I read your "bio" and was amused to discover that we both worked on resonant extraction at the same time, you in Chicago, I in Urbana-Champaign. My first "accelerator project" was to commission a new vacuum system for improving extraction from the 22 MeV Betatron, which Ned Goldwasser, Tom Robillard and I used to measure the "density effect" in electron energy loss. Specifically we wanted to learn why the extracted beam intensity was about 100 times less than the internal target beam. By installing a moveable internal target, and gradually moving the peeler into the beam, we were able to show that most of the beam losses took place at injection, not extraction. Like many accelerator experiments, it was not published.

For the moment, relax, smell the roses, enjoy yourself and receive our adulation. You've earned it.

Best wishes,

Fred Mills

Dear Lee,

Unfortunately, I cannot attend the ceremony held for your retirement. I wish you all the best in your new life and as much success and achievements as during your brilliant career in the field of accelerator physics. Personally, I strongly appreciated the fruitful discussions we had each time we met in Argonne.

Kindest regards.

Annick

Sorry I cannot make it to Lee's retirement Symposium and Banquet. Please give Lee my regards and best wishes; we are old friends.

Pief Panofsky

Dear Committee,

Thank you very much for the invitation. It is a great occasion. Unfortunately, I regret that I will not be able to attend due to schedule conflict. However, as Alex's earlier e-mail mentioned, we will have a member in our department, Zhirong, who will kindly represent us.

I personally have learned a lot of accelerator physics, directly or indirectly, from Lee. Lee has a lot of personal notes of his derivation for optics and magnetic fields applied to accelerators. Someone in Argonne ought to dig out all those notes from him. His normalization solution for linear couplings has been widely applied in accelerator optics and diagnostic codes much more than Lee would have expected or even have known. Even today we (at SLAC, ANL, ...) use the "Model-Independent Analysis (MIA)", we can not applied MIA well to real accelerators without including normalization solution for linear couplings.

Best wishes to Lee.

Yiton Yan

Hi Kathy,

Unfortunately I will not be able to attend Lee Teng's retirement event. I am sure you will make it memorable for Lee. He has had a distinguished career; one that has touched most of us in the accelerator community. I wish him well in retirement and trust that he will still be a presence in the community of accelerator physicists.

Thanks for the invitation,

Bob Macek

Dear Organizing Committee,

To my great chagrin I will not be able to participate in the Lee Teng celebration. I will send my greetings directly to Lee on that occasion.

Wishing you a very successful symposium,

Dieter Mohl

Hello Lee!

I'm amazed to realize that you've been doing accelerator stuff for 57 years! It was great fun to read your autobiography, and to see your picture which says you still look exactly the same as the youngster I first met in the MURA years. So you're retiring from Argonne but I'm sure you're not retiring from accelerators and I look forward to still meeting you at conferences for many more years!

I also need to say that I'm deeply disappointed that I've had to cancel my plan to attend your "Retirement Celebration" - - an important meeting has come up here for Thursday afternoon and they want me to attend (the meeting deals with improved cyclotrons for medicine and several important MD's think they can't adjust their schedules, so with much regret, I decided I should yield to that, and stay here on Thursday.

So I send you warmest greetings on behalf of the accelerator oldsters here, and look forward to seeing you on many future occasions!!!

Henry Blosser

Dr. Lee C. Teng
Argonne National Laboratory,
Argonne, IL 60439

February 22, 2005

Dear Dr. Teng:

On the occasion of your retirement, I would like to say that we, KEK accelerator physicists are so grateful to you for your great contribution to lay the foundation of the KEK accelerator physics group.

I suppose that almost all accelerator physicists recognize how great your achievements in accelerator physics in the past fifty years are. Here I would like to mention specifically about your contribution to research activities of the KEK accelerator group.

You visited us first in 1972, which was established in 1971 and had begun the construction of a 12GeV proton synchrotron. Your work here was really impressive. In a short time you redesigned the lattice and injection/extraction systems of the synchrotron ring without utilizing computer calculation. And you gave detailed instructions and guided us to adopt your idea. The synchrotron was completed in 1976 and has been operated for about thirty years without any serious trouble, and is now producing critically important physics results on the neutrino mass by the K2K long baseline neutrino oscillation experiment.

After 1972, you came to KEK many times and always gave us a lot of invaluable advice. Now we are constructing a high intensity 50 GeV proton synchrotron, J-PARC: a joint project between KEK and JAERI (Japan Atomic Energy Research Institute). In the design of the main 50 GeV ring, inspired by your original work on the transitionless synchrotron lattice, we adopted the transitionless scheme by making the ring compaction factor imaginary.

We have been so much indebted to you for your help in the progress of the KEK accelerator research activities, and highly appreciate your contribution. Finally I wish you and your family a happy life all through.

Yours sincerely,

Yoshitaka Kimura
Professor Emeritus, KEK

Regrets from Denny Mills

I am very sorry I will not be able to attend Lee's celebration after all. If you have an opportunity please express to Lee my best wishes, and my deep respect and admiration.

Best regards,

Lia Meringa

I am sorry that the weather at Bloomington is heavily snowing, it would be very difficult for me to drive up today. Give my best regards to Lee. His career has been so influential that very few people can reach.

Again,
Best regards to your successful celebration!

S.Y. Lee
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Lee,

You were one of the first people I met at Argonne when I showed up in July 1968. You were then and you remain a true gentleman. It has been my pleasure to know you over the years.

Best wishes for retirement.

Bruce

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Hello Lee,

I came a bit late on the notice of your retirement celebration in Fermilab Today. I see there were some familiar and distinguished speakers at the Symposium - Ron, Don, and Phil. I would have liked to have been there to hear their review of your many contributions to the world of accelerators. I should add my profound appreciation for all of the help and support you provided me during the "good old" Main Ring days, in the 70's.

I hope your retirement phase will be both enjoyable and fulfilling. Will you maintain an office at Argonne? Stay in Illinois?

Pat and I have been living in Tucson, AZ, for nearly 5 years now; getting back to Illinois several weeks per year. Fred Mills and Phil Livdahl have "summer" homes about 12 miles from our home here. My science activities consist of staying abreast of HEP activities, with special attention to Fermilab, and attending lectures at the Univ. of Arizona on astronomy, cosmology, and planetary science.

Best regards,
Frank Turkot

Hello Lee-

Congratulations on your retirement and the symposium. I am sorry I was unable to attend.

I enjoyed reading your history article!

Gil

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~ STS-107 ~ ~ MIA-POW ~  
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